

REMARKS

Applicant appreciates the Examiner's thorough consideration provided the present application. Claims 1-13 are now present in the application. No amendments to claims are made in this Reply. Claims 1 and 13 are independent. Reconsideration of this application is respectfully requested.

Allowable Subject Matter

The Examiner has indicated that dependent claims 9-12 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims. Applicant greatly appreciates the indication of allowable subject matter by the Examiner.

Claim Rejections Under 35 U.S.C. § 102

Claims 1-8 and 13 stand rejected under 35 U.S.C. §102(e) as being anticipated by Takauji et al., U.S. Patent No. 6,292,284 (hereinafter "Takauji"). This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

Claim 1

Independent claim 1 recites a combination of steps including "increasing a control value of a driving signal generator for driving a pickup unit to output an optical power until the driving signal generator starts to generate a driving voltage" and "setting the increased control value at which the driving signal generator starts to generate the driving voltage as an offset value for

setting up a desired optical power of the pickup unit.” Applicant respectfully submits that the combination of steps as set forth in independent claim 1 is not disclosed or suggested by reference relied on by the Examiner.

In particular, the Examiner in the outstanding Office Action simply cited Takauji in FIGs. 5 and 8-11 and col. 6 and 10-11 and made a conclusory statement that Takauji in FIGs. 5 and 8-11 and col. 6 and 10-11 discloses “increasing a control value of a driving signal generator for driving a pickup unit to output an optical power until the driving signal generator starts to generate a driving voltage” and “setting the increased control value at which the driving signal generator starts to generate the driving voltage as an offset value for setting up a desired optical power of the pickup unit” as recited in claim 1. However, the Examiner *never* explained how he construed Takauji in FIGs. 5 and 8-11 and col. 6, 10 and 11 as disclosing these claimed features. Without indicating how Takauji discloses this claimed feature, the Examiner fails to establish the *prima facie* case of anticipation or obviousness regarding claim 1.

In the alternative, Takauji also fails to teach the above combination of steps as set forth in independent claim 1. Takauji in FIG. 5 discloses a light emitting element driving apparatus, including a driving unit 30 for driving the laser diode 10, and an initial value setting unit 70 setting a raising component as an initial value in the control signal having the discrete control amount supplied from the D/A converter 63 of the digital APC unit 60 to the driving unit 30. FIGs. 8-11 simply disclose the other embodiments of the initial value setting unit 70.

It seems that the Examiner might refer to Takauji’s driving unit 30 as the driving signal generator as recited in claim 1 and refer to Takauji’s initial value setting unit 70 as the device to provide a control value of a driving signal generator as recited in claim 1. As shown in FIG. 5 of

Takauji, the initial value setting unit 70 includes a voltage source 71 and an A/D converter 72.

Takauji in col. 16, lines 39-54 states:

The voltage source 71 as a voltage generation unit generates a voltage signal to be set as a raising initial value in the control signal supplied from the digital APC unit 60 to the driving unit 30.

The A/D converter 72 as an analog/digital conversion unit converts a voltage signal produced by the voltage source 71 into a digital signal. The digital signal obtained by conversion performed in the A/D converter 72 is *preset as an initial count value in the up-and-down counter circuit 62.*

In other words, when a clock (identical to a clock inputted to the data conversion unit 21) is inputted to the A/D converter 72 after power input for the light emitting element driving apparatus 20 of the first embodiment, a voltage signal from the voltage source 71 is converted into a digital signal and then given *as an initial value to the preset input of the up-and-down counter circuit 62.* (Emphasis added.)

In other words, the value provided by the initial value setting unit 70 is *a preset value* predetermined by the voltage of the voltage source 71. Accordingly, the *preset value* provided by the initial value setting unit 70 is not set based on whether the Takauji's driving unit 30 starts to generate a driving voltage for driving the laser diode 10. Therefore, the embodiment of Takauji in FIG. 5 fails to teach "increasing a control value of a driving signal generator for driving a pickup unit to output an optical power until the driving signal generator starts to generate a driving voltage" and "setting the increased control value at which the driving signal generator starts to generate the driving voltage as an offset value for setting up a desired optical power of the pickup unit" as recited in claim 1.

The other embodiments of Takauji as shown in FIGs. 8-11 also fail to teach the above combination of steps as set forth in independent claim 1. In particular, Takauji in FIG. 8 discloses the initial value setting unit 70-2 as another embodiment of an initial value setting unit.

The initial value setting unit 70-2 has a plurality of voltage sources 73-1 to 73-n and a switch 74.

Takauji in col. 22, lines 8-59 states:

The plurality of voltage sources 73-1 to 73-n generate voltage signals *according to characteristics of the laser diode 10*. By the rear stage switch 74, a voltage signal generated from any of the plurality of voltage generating circuits 73-1 to 73-n *according to a used characteristic of the laser diode 10 is selectively outputted*.

The voltage generating circuits 73-1 to 73-n generate voltage signals V different from one another *according to threshold current characteristics of the laser diode 10*, each of the voltage signals V being equivalent to a driving current value for obtaining a light output which is above a threshold current I_{th} and below set light power. The voltage generating circuits 73-1 to 73-n respectively include current sources 75-1 to 75-n and transistors 76-1 to 76-n which function as load Nch (N channel) transistors different from one another in size.

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Specifically, when a clock is supplied after power input, the initial value setting unit 70-2 *presets* a voltage signal V as a digital value in the up-and-down counter circuit 62 *based on setting of the switch 74 according to the kind of the used laser diode 10*, the voltage signal V being equivalent to a driving current value for obtaining a light output which is above a threshold current I_{th} and below set light power. (Emphasis added.)

In other words, the value provided by the initial value setting unit 70-2 is *a preset value predetermined by the characteristics of a used laser diode 10*. Accordingly, the *preset value* provided by the initial value setting unit 70-2 is not set based on whether the Takauji's driving unit 30 starts to generate a driving voltage for driving the laser diode 10.

Takauji in FIG. 9 discloses the initial value setting unit 70-3 as another embodiment of an initial value setting unit. The initial value setting unit 70-3 has a current source 71c, a capacitor 71d, and a switch 77. Takauji in col. 24, lines 10-14 states:

Specifically, after the power input, the switch 77 is turned ON. When a clock is subsequently inputted, the initial value setting unit 70-3 *presets a voltage signal as an initial setting value* converted into a digital value in the up-and-down counter circuit 62. (Emphasis added.)

In other words, the value provided by the initial value setting unit 70-3 is *a preset value* determined by a subsequent clock input, not set based on whether the Takauji's driving unit 30 starts to generate a driving voltage for driving the laser diode 10.

Takauji in FIG. 10 discloses the initial value setting unit 70-4 as another embodiment of an initial value setting unit. Takauji in col. 25, lines 3-6 states:

Specifically, the initial value setting unit 70-4 *presets each bit data constituting a count value* in the up-and-down counter circuit 62 by grounding (GND; set bit data "0") or supplying a voltage Vdd (set bit data "1"). (Emphasis added.)

In other words, the value provided by the initial value setting unit 70-4 is *a preset value* (GND or Vdd), not set based on whether the Takauji's driving unit 30 starts to generate a driving voltage for driving the laser diode 10.

Takauji in FIG. 11 discloses the initial value setting unit 70-5 as another embodiment of an initial value setting unit. Takauji in col. 25, lines 55-60 states:

The initial value setting unit 70-5 includes a voltage source 79a as a voltage generation unit for producing a voltage signal to be used as *a preset initial value* and a voltage adding circuit 78 for adding the voltage signal from the voltage source 79a to a control signal of an analog amount supplied from the D/A converter 63 to the driving unit 30. (Emphasis added.)

In other words, the value provided by the initial value setting unit 70-5 is *a preset value* predetermined by the voltage of the voltage source 79a, not set based on whether the Takauji's driving unit 30 starts to generate a driving voltage for driving the laser diode 10.

In addition, Takauji in col. 6, 10 and 11 simply summarizes the embodiments of the initial value setting unit shown in Takauji in FIGs. 5 and 8-11. In view of the above, the Takauji in FIGs. 5 and 8-11 and col. 6, 10 and 11 fails to teach "increasing a control value of a driving signal generator for driving a pickup unit to output an optical power until the driving signal

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generator starts to generate a driving voltage” and “setting the increased control value at which the driving signal generator starts to generate the driving voltage as an offset value for setting up a desired optical power of the pickup unit” as recited in claim 1.

Claim 13

Previously presented independent claim 13 recites “a control value for generating a predetermined driving signal level is previously stored in a nonvolatile memory in the form of a difference between the control value and an offset value for setting up an optical power.” As the Examiner may know, claim 13 was added in the Amendment of March 16, 2006 to include the subject matter of *allowable dependent claim 10*, its base claim 1 and the intervening claim 7.

The Examiner on page 4, line 13 of the outstanding Office Action seemed to suggest that the ground for rejecting claim 11 is the same as the ground for rejecting claims 1 and 8. However, the recitation “a control value for generating a predetermined driving signal level is previously stored in a nonvolatile memory in the form of a difference between the control value and an offset value for setting up an optical power” is not included in claims 1 and 8. Therefore, it is believed that the Examiner fails to establish a *prima facie* case of anticipation or obviousness regarding claim 13.

It should be noted that although independent claim 13 was not amended in the Amendment of July 20, 2006, *some of the above recitation of independent claim 13 presented in the Amendment of March 16, 2006 was inadvertently omitted in the Amendment of July 20, 2006.* Applicant respectfully submits that since independent claim 13 was not amended in the

Amendment of July 20, 2006, *pending independent claim 13 should still be the same as that presented Amendment of March 16, 2006, which is re-presented as follows:*

13. A method for controlling an optical power level, comprising the steps of:

- a) regularly increasing a control value of a driving signal generator for driving a pickup unit adapted to output an optical power;
- b) checking a driving signal of the driving signal generator according to the increasing control value; and
- c) setting a control value at which the driving signal begins to be generated as an offset value for setting up an optical power; and
- d) calculating a control value for generating a driving signal of the pickup unit on the basis of the offset value, wherein a control value for generating a predetermined driving signal level is previously stored in a nonvolatile memory in the form of a difference between the control value and an offset value for setting up an optical power.

In view of the above, since the Examiner has indicated that claim 10 is still allowable, independent claim 13 should be still in condition for allowance for at least the same reason as claim 10.

Since Takauji fails to teach each and every recitation of independent claims 1 and 13, Applicant respectfully submits that independent claims 1 and 13 and their dependent claims (at least due to their dependency) clearly define over the teachings of Takauji. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 102 are respectfully requested.

Additional Cited References

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but rather to merely show the state of the art, no further comments are necessary with respect thereto.

CONCLUSION

All the stated grounds of rejection have been properly traversed and/or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently pending rejections and that they be withdrawn.

It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

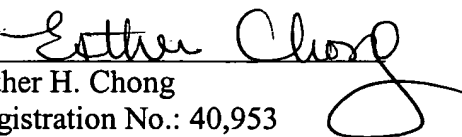
In the event there are any matters remaining in this application, the Examiner is invited to contact the undersigned at (703) 205-8000 in the Washington, D.C. area.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant respectfully petitions for a one (1) month extension of time for filing a response in connection with the present application and the required fee is attached herewith.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: February 5, 2007

Respectfully submitted,

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